REMARKS/ARGUMENTS

Upon entry of the instant amendment, claims 8 and 33 will be amended, whereby claims 8-38 will remain pending. Claims 8 and 33 are independent claims.

Reconsideration and allowance of the application are respectfully requested.

Discussion Of Telephone Interview

Applicants express appreciation for the courtesies extended by the Examiner during a January 12, 2004 telephone interview wherein the Office Action mailed September 16, 2003 and amendments to the independent claims were discussed.

In particular, arguments were presented regarding Applicants' invention, including a discussion of paragraphs [0005], [0014] and [0016] through [0018] of Applicants' Substitute Specification. Also, Applicants discussed amendment of the claims in the manner amended herein. The Examiner indicated that he would consider the amended claims upon submission of a response. However, the Examiner indicated that in view of the finality of the Office Action it would be necessary to file a Request for Continued Examination to have the amendment considered.

Moreover, an amendment to paragraph **[0016]** as presented herein was discussed with the Examiner.

Formal Matters

Upon review of the specification, it was noted that in paragraph **[0016]** "aggravate" should more accurately be "make more difficult" Accordingly, by the present amendment this amendment is being made in the Substitute Specification.

Applicants respectfully submit that a fee should not be necessary. However, if any fees are associated with this amendment, authorization is hereby provided to charge any required fee to Deposit Account No. 19-0089.

Response To Rejections Based Upon Prior Art

The following rejections are set forth in the Office Action:

(A) Claims 8-20, 23, 27, 28, 30, 33 and 34 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Kudo et al. (hereinafter "Kudo"), JP 57-210941;

(B) Claims 21, 22, 24-26, 29, 31, 32 and 35-38 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Kudo, JP 57-210941, and further in view of Smith et al. (hereinafter "Smith, U.S. Patent No. 6,287,398.

Applicants note that independent claim 8 is directed to creep-proof and corrosion-resistant nickel-based alloy comprising, in wt-%:

0.0015 to 0.60 carbon (C);

0.20 to 0.90 nitrogen (N);

22.0 to 32.0 chromium (Cr);

5.0 to 20.0 elements of the groups 4, 5, and 6 of the periodic table, except Cr;

0.03 to 3.0 aluminum (Al);

0.4 to 3.0 silicon (Si);

maximum of 0.014 phosphorus (P);maximum of 0.004 sulfur (S);

up to 0.60 manganese (Mn);

minimum of 51 of nickel (Ni) or a combination of nickel (Ni) and cobalt (Co); and

melting-related contaminants, and

the alloy including at least one of nitrides or carbides in intercrystalline regions to substantially prevent intercrystalline sliding due to stable deposits in the intercrystalline regions.

Moreover, Applicants note that independent claim 33 is directed to creep-proof and corrosion-resistant nickel-based alloy consisting essentially of, in wt-%:

0.0015 to 0.60 carbon (C);

0.20 to 0.90 nitrogen (N);

22.0 to 32.0 chromium (Cr);

5.0 to 20.0 elements of the groups 4, 5, and 6 of the periodic table, except Cr;

0.03 to 3.0 aluminum (Al);

0.4 to 3.0 silicon (Si);

maximum of 0.014 phosphorus (P);

maximum of 0.004 sulfur (S);

up to 0.15 of at least one element of Group 3 of the periodic table, except actinoids;

up to 0.60 manganese (Mn);

up to 14.8 iron (Fe);

up to 0.01 (B);

minimum of 51 of nickel (Ni) or a combination of nickel (Ni) and cobalt (Co); and

melting-related contaminants, and

the alloy including at least one of nitrides or carbides in intercrystalline regions to substantially prevent intercrystalline sliding due to stable deposits in the intercrystalline regions.

Thus, amongst other features, Applicants' claims are directed to creep-proof and corrosion-resistant nickel-based alloy, with the alloy including at least one of nitrides or carbides in intercrystalline regions to substantially prevent intercrystalline sliding due to stable deposits in the intercrystalline regions.

In contrast to Applicants' disclosed and claimed invention, Kudo is directed to an alloy for high strength oil well pipes with superior stress corrosion cracking resistance by adding certain components in specified ratios. Smith is directed to high strength alloy tailored for high temperature mixed-oxidant environments. Thus, there is no teaching or suggestion in any of the prior art utilized in the rejections of record to arrive at Applicants' disclosed and claimed invention.

In particular, Kudo discloses an alloy for high-strength pipes for use in oil field technology, which alloy features a superior stress fracture- and corrosion resistance. Oil field pipes have to be completely non-magnetic at the ambient temperature, because geomagnetic field sensors are installed in the pipe for measuring and controlling the drill direction in the course of a deep-hole drilling. Moreover, it is important for these alloys to be highly corrosion-resistant to chloride solutions, for them to have a high resistance to stress fracture corrosion that is triggered by chloride solutions. Finally, the material must have a high strength, because the drill bit is often jammed in

rock, and great tensile forces are necessary to get it out of the borehole. The alloy disclosed by Kudo is designed for these stresses in terms of alloy technology at essentially room temperature, whereby the nitrogen contents must be below 0.30 % by weight, because production by means of pressure metallurgy is not provided. There is no teaching or suggestion in Kudo, whether taken alone or combined with Smith, to arrive at a creep-resistant alloy as recited by Applicants.

For the sake of brevity, Applicants are not repeating their arguments from their previously filed response, but includes these arguments herein. However, Applicants once again direct attention to MPEP 2144.05 wherein criteria for regarding optimization of ranges is presented. Moreover, while it is noted that court decisions, such as In re Lance G. Peterson et al, (02-1129), decided January 8, 2003, place a burden on Applicants in establishing patentability when elements in alloys in the prior art are close to and/or overlap the ranges of elements recited by Applicants, the disclosure of the references is of such breadth that Applicants' invention is not specifically disclosed in Kudo. Moreover, it would not have been obvious to manipulate variables in Kudo in the manner asserted in the rejection to arrive at Applicants' invention. Still further, one having ordinary skill in the art would not seek to optimize variables in Kudo in the manner asserted in the rejection. Moreover, Applicants' alloy has advantageous properties not taught or suggested in the alloys disclosed in the prior art.

In the instant situation, Applicants' claimed invention provides a creep-proof and corrosion-resistant nickel-based alloy. In this regard, the Examiner's attention is directed, for example, to paragraphs [0005], [0014] and [0016] through [0018]. of Applicants' Substitute Specification wherein it is disclosed that the advantages achieved according to the invention are

essentially based on the fact that, at temperatures of up to 1200 °C, intercrystalline creeping in the material is largely prevented due to stable deposits in the intercrystalline regions and an increased mixed crystal hardening is achieved. Additionally, it is disclosed that the adhesion of chromium spinel and such layers to the surface is increased, causing an improved high-temperature corrosion resistance of the components. Still further, the Examiner's attention is directed, for example, to Applicants' examples, such as illustrated in Tables 2 and 3. These tables clearly show that a deviation from a combination of alloy elements according to the invention in the given concentration ranges results in a deterioration of the mechanical properties of the alloys.

As can be seen, the instantly claimed invention is not rendered obvious over Kudo and/or Smith. In particular, it is noted that to establish a *prima facie* case of obviousness wherein ranges are claimed, the rejection must establish motivation for arriving at the ranges claimed by Applicants. Moreover, the rejection must establish that the particular variables being modified are result effective variables. See In re Antonie, 195 USPQ 6 (CCPA 1977). In the instant situation, there is no teaching or suggestion in the prior art to arrive at the creep-proof and corrosion-resistant nickel-based alloy recited in Applicants' claims.

Applicants respectfully submit that a prima facie case of obviousness cannot be established based upon the prior art utilized in the rejections. However, even if a prima facie case of obviousness could be established in this case, the instantly claimed invention yields unexpected results sufficient to rebut a prima facie case of obviousness. In this regard, In re Soni, 34 U.S.P.Q.2d 1684, 1687-1688 (Fed. Cir. 1995), held that a showing of substantially improved results for the invention, and a statement that results were unexpected suffices to establish

unexpected results absent evidence to the contrary. Id. at 1687-88. In the instant case, the superior characteristics of the claimed invention are disclosed throughout the specification, and indicated in the Examples.

Accordingly, the rejections of record should be withdrawn as improper, and all of the claims should be indicated as allowable over the prior art.

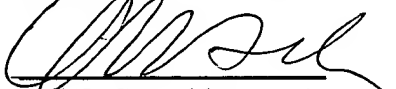
CONCLUSION

In view of the foregoing, the Examiner is respectfully requested to reconsider and withdraw the rejection of record, and allow all the pending claims.

Allowance of the application is requested, with an early mailing of the Notices of Allowance and Allowability.

If the Examiner has any questions or wish to further discuss this application, the Examiner is invited to telephone the undersigned at the below-listed telephone number.

Respectfully submitted,
Markus SPEIDEL et al.



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